



2004 Water Quality Report



The 2004 Annual Drinking Water Quality Report is provided to give you information about the drinking water quality in the City of Fairfax. The City of Fairfax is dedicated to providing the highest quality drinking water for consumption and fire protection. *The City of Fairfax is proud to report that your drinking water meets or exceeds all State and Federal drinking water standards, which are administered by the Virginia Department of Health (VDH).* Please take time to review this report and feel free to contact us with any questions or concerns.

Goose Creek Water Treatment Plant

The Goose Creek Water Treatment Plant, which serves the City of Fairfax, is located in Loudoun County. The treatment facility also services parts of Loudoun and Fairfax Counties. Recently, the Virginia Department of Health conducted a source water assessment of our system and determined that the reservoirs were of high susceptibility to contamination according to the criteria developed by the State and its approved Source Water Assessment. If you would like a copy of this report which includes detailed information concerning land use and any known contamination please call the City of Fairfax Utilities Department at **703-385-7920**. The City also has the ability to purchase water from the Fairfax County Water Authority (FCWA). For information on FCWA water quality, please call **703-698-5800**, or log onto their website at www.fcwa.org.

Treating Your Water

The Goose Creek Water Treatment Plant's state licensed operators use multiple processes to remove particulate, organic, inorganic, and microbial contaminants. A 24- inch transmission main supplies water to the City's three storage tanks for distribution to consumers. The City of Fairfax continually strives to maintain a quality product and are currently in the process of instituting additional treatment processes to ensure continued compliance with State and Federal standards.



Did you know:

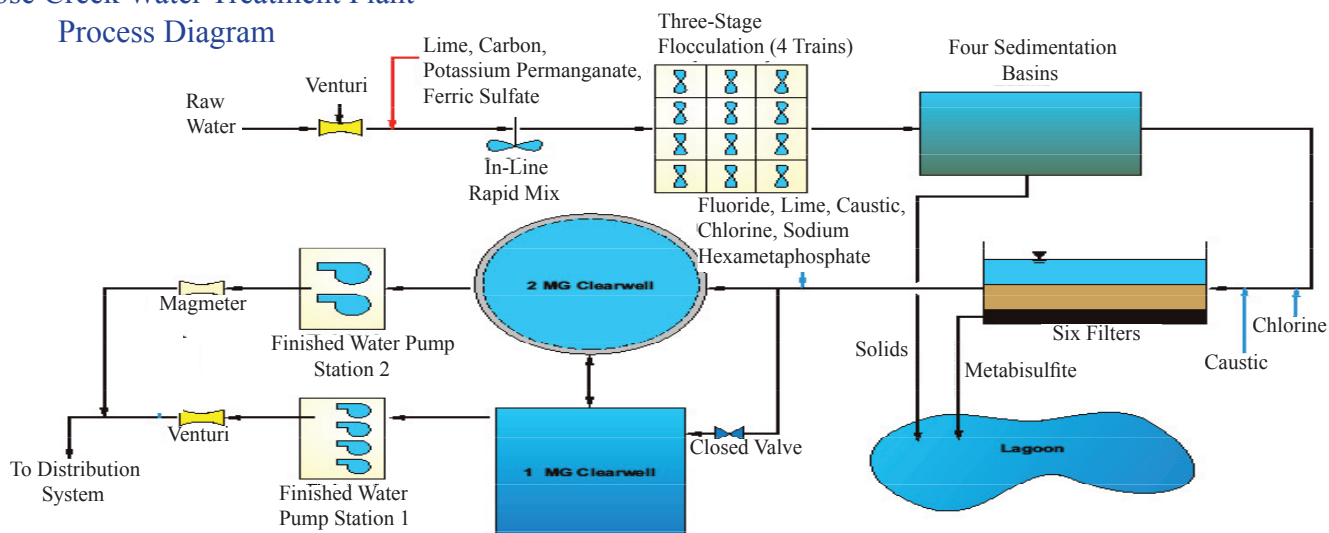
The average family of four uses 8,300 gallons of water per month. See inside for ways that you can conserve water every day.



This report contains information about the source of your drinking water quality results, and federal standards. Technical language used throughout the report is mandated by the EPA. If you have any questions concerning this report, please contact us at **703-385-7920**.

Additional information and EPA/CDC guidelines are available from the EPA's Safe Drinking Water Hotline, **1-800-426-4791** or on the world wide web, www.epa.gov/safewater.

Goose Creek Water Treatment Plant Process Diagram

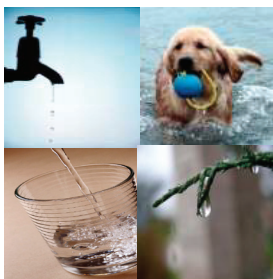


Why Must Your Water Be Treated?

Drinking water can possibly contain small amounts of some contaminants. This does not indicate that the water poses a health risk. Health care providers can provide information about drinking water for people such as immuno-compromised persons, those undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, the elderly, and infants.

The sources of drinking water include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals, or human activity. These contaminants in source water include:

- ◆ **Microbial contaminants**, such as viruses and bacteria which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife. Filtration and disinfection removes microbial contaminants. Parasites such as *Cryptosporidium* and *Giardia* may cause illness. These parasites are found in places including swimming, pools, rivers, and drinking water. Treatment techniques used by the City of Fairfax provide optimum removal of these contaminants.
- ◆ **Inorganic contaminants**, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, and farming.
- ◆ **Pesticides and herbicides**, which may come from a variety of sources such as agricultural industries, urban stormwater runoff, and residential uses.
- ◆ **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- ◆ **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities. Those drinking water contaminated with alpha and beta radiation at high levels may have an increased risk of getting cancer.
- ◆ **Disinfection byproducts**, which prevent the occurrence and spread of many serious and potentially deadly diseases such as cholera, dysentery, and typhoid. Chlorine used for disinfection can react with naturally occurring organic matter in the water which results from the degradation of vegetation, leaves, and wood. Small amounts of byproducts may result from this process. Liver, kidney, or central nervous system problems may develop after exposure to drinking water with levels of disinfection byproducts. Disinfection byproducts such as trihalomethanes (THMs) and haloacetic acids (HAAs), in addition to naturally occurring organic matter such as total organic carbon (TOC) are regulated to ensure limited exposure to these contaminants.



◆◆◆ Ways You Can Conserve Water ◆◆◆

- Turn off the water while brushing your teeth.
- Water lawns in the morning or evening to prevent evaporation.
- Clean sidewalks and driveways with a broom instead of a watering hose.
- Run the washing machine with a full load.
- Take showers instead of baths. Low flow shower heads typically use less water.
- Make sure the dishwasher is full before running a cycle.



Substances Detected in Your Water

Substance (Units)	Average Level Detected (Min.-Max.)	MCL (Allowed)	EPA's MCLG (Goal)	Major Source In Drinking Water	Meets or Exceeds Standards
Alpha Emitters (pCi/L) ¹	1.1	15	Zero	Erosion on natural deposits	✓
Beta/Photon Emitters (pCi/L) ^{1,2}	3.6	50	Zero	Decay of natural and man made deposits	✓
Total Barium (mg/L)	0.024	2	2	Erosion on natural deposits	✓
Chlorine MRDL (ppm)	1.9 (1.2-2.1)	4	4	Water additive used to control microbes	✓
Copper (ppm) ^{3,4}	0.15 90th percentile level	Action level 1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits	✓
Fluoride (ppm)	.94 (0.57-1.16)	4	4	Erosion of natural deposits	✓
Total Chromium (mg/L)	0.004	0.1	0.1	Chemical manufacturing	✓
Haloacetic Acids (HAAs) (ppb) ⁵	29 (14-29)	60	N/A	Byproduct of drinking water chlorination	✓
Lead (ppb) ^{3,4}	2 90th percentile level	Action level 15	Zero	Corrosion of household plumbing systems; erosion of natural deposits	✓
Nitrate/Nitrite (ppm)	0.20	10	10	Runoff from fertilizer use; septic tank leaching; sewage; erosion of natural deposits	✓
Total Organic Carbon (TOC) ⁶	1.32 (1.0-1.90)	Treatment Technique	Treatment Technique	Naturally occurring organic matter	✓
Trihalomethanes (ppb) ⁵	60 (13-60)	100/80	N/A	Byproduct of drinking water chlorination	✓
Turbidity (NTU) ⁷	0.45 Highest weighted average	Treatment Technique	Treatment Technique	Soil runoff	✓

¹ Testing required every four years.

² Beta Emitters also represented as 4 mrem/year.

³ No sampling locations exceeded Action level for copper and lead.

⁴ Testing required every three years. Data from 2002.

⁵ Highest in four compliance quarters.



⁶ TOC reported as a removal ratio on a running average annual basis. The removal ratio must be greater than or equal to 1.0.

⁷ Turbidity levels are measured during the treatment process after filtration. The turbidity level of filtered water shall be less than or equal to 0.3 NTU in at least 95% of the measurements taken each month and less than 1 NTU at all times. The lowest monthly percentage of City of Fairfax samples meeting the turbidity limits was 99%.

★★★As in previous years, the City of Fairfax is proud to report that there were no detections of ★★★ total coliforms or fecal coliforms in the water sampled in 2004. Additionally there was no detection, in sampled water, of Giardia, Cryptosporidium, or methyl tertiary-butyl ether (MTBE), a gasoline additive.

Definitions and Abbreviations

Action Level - concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

MCLG - Maximum Contaminant Level Goal (the level of a contaminant in drinking water below which there is no known or expected risk to health.) MCLGs allow for a margin of safety.

MCL - Maximum Contaminant Level (the highest level of a contaminant that is allowed in drinking water.) MCLs are set as close to the MCLG as feasible using the best available treatment technology

MRDL - Maximum Residual Disinfection Level (a measure of the chlorine residual concentration at specified points in the water distribution system.)

mrem/year - millirems per year (a measure of radiation as absorbed by the body)

NTU - Nephelometric Turbidity Units

pCi/L - Picocuries per liter (a measure of radioactivity in water)

ppb - parts per billion

ppm - parts per million

Treatment Technique - Required process intended to reduce the level of a contaminant in drinking water

Turbidity - a measure of the clarity of water, measured in NTUs. Turbidity has no health effects, but can hinder the effectiveness of disinfectants.

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City of Fairfax
Utilities Department
10455 Armstrong St.
Fairfax, VA 22030

Your Comments Are Appreciated!



Customer comments and questions are important to the City of Fairfax Utilities Department. Please feel free to contact Mr. John Boryschuk, P.E., the Director of the Department of Utilities, at 703-385-7920 for further information concerning your water quality or to discuss the 2004 Drinking Water Quality Report.

Please log onto the City website, www.fairfaxva.gov, to learn more about City events, City Council meetings, and updated information and activities within the City of Fairfax.

As mandated by the EPA, this report will be provided annually to customers. We are proud to report that the drinking water quality for the City of Fairfax was well within all State and Federal drinking water standards. We hope you found this report informative and please feel free to contact us with any comments.